Clubs, Stages, & Multitouch

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ABSTRACT
This paper describes research done during the very first phases of the MuTable [The Multi-touch Multimedia Table] research project. This project explores the potential use of multitouch related applications in public contexts like events, libraries and museums. By conducting several observations and interviews with VJ's and DJ's, musicians, new media artists/performers, library and museum vistors several scenario's were created that aim to identify valuable applications of multitouch technology in real world public contexts. This paper reports on the event context to bring forward elements to better guide application design related to using a multitouch interface to control multimedia content within the working area of DJ's, VJ's and other stage performers.

Keywords
Context, Tactile, NUI, Multitouch, Interviews & Observations, MuTable

INTRODUCTION
Technology-wise a lot has been discovered and rediscovered concerning multitouch, natural user interfaces and tabletop computing. With the first commercially available products and frameworks [1],[2] being released, it becomes clear that multitouch related products have a certain potential in the market. At the moment of writing it is striking that a lot of the products, both hardware and software, are often struggling to go beyond the state of the art when developing applications. As an example, the typical photobrowsing application -as made popular and showcased by Jeff Han- has been recreated by others several times. This allowed to explore new types of gestures and interaction possibilities with multitouch technology but only explores part of the whole spectrum of application possibilities made possible by the new technological advancements. Obviously, going beyond the 'casual' applications and finding true added value is perhaps one of the hardest tasks.

In the MuTable project, we tried to tackle this by starting from user input in several predefined contexts to set a main focus and create a common use case/scenario. The common denominator of these contexts is that they all involve a public setting. Hereby we aim to open a platform to think about new applications in real world public contexts. A nuance that should be made here is that other ongoing projects [3] are and have been exploring interactions related to surface computing and public contexts for a substantial amount of time.With regard to the MuTable project, we want to contribute to this body of research by exploring several application contexts to see in which ways multitouch technology can be introduced to create true benefit for the users in these situations. To do this, we start from observations and interviews of people whom are actively involved in the given public setting (either as stakeholder or end user) to see which opportunities can be identified where.

FOUR PUBLIC CONTEXTS
Within the MuTable project, several public contexts had been predefined before the project started. The main reason that these four contexts were chosen is related to the partners in the project. Before the project started, none of the public institutions involved had actively used multitouch technology. Therefore the first thing that needed to be looked at was a common scenario where most aspects and elements of interest regarding each partner would be highlighted. To come to this scenario we executed several observations in all contexts. First the event context will be covered, which will be split up into two settings: "the club" and "the stage". Afterwards the museum and library contexts will be covered.

Setting 1 : The club
The interesting thing about a club is that mostly both DJ's and VJ's are working with multimedia content, being music and video respectively. As this type of content has been used in numerous ways in relation to multitouch related interfaces and applications the 'club' setting opens quite a lot of possibilities towards the integration of technology and HCI research in general, as has been illustrated by other research projects [4].

In this first setting, observations and interviews have been executed with two VJ's and two DJ's. The VJ's were observed whilst performing at the FUSE club in Brussels, Belgium. The DJ's were observed at their personal home studio. Both VJ's and DJ's performed were DJ/VJ "duo's" meaning that they always perform together. This allowed for interesting interactions between the couples to see how they collaborated on the very specific tasks related to VJ and DJing.

Method

During the observations no specific tasks or questions were asked at first. The participants were only asked to "do as they would normally do" whilst performing. During this first phase, observation was done purely passively. After approximately 30 minutes, the music was turned down and the observation type switched from passive to active. Each interview was divided into three very general phases:

- Pre: activities done by whilst preparing for a performance
- Live: activities done by during a performance
- Post: activities done after a performance both at the club and back at home

The specific questions asked depended on what happened during the passive observation. However, the predefined topics: 'hard and software setup', 'type of audiovisual effects' and 'usage of analogue and digital media' were elements that always formed the core of the interview. Besides that, all observations were videotaped for future reference.

Conclusions : VJ

As VJing is a relatively new performance type at clubs, the equipment used is not readily available at clubs. Therefore, the VJ's spent a substantial amount of time installing their equipment (fig. 1). The actual VJing was done using software (Modul8) in combination with a MIDI controller. The controls on the MIDI controller were mapped to the software and thus allowed the VJ to select clips and control visual effects (eg. speed up, speed down, invert colors,…). Observing the VJ's led to following main conclusions:

- Customization: both VJs used the same software, but used it in totally different ways. Customizing their software and hardware was part of putting their own identity into the things they created on screen.
- Hardware control: both VJs stated the importance of tangible controls. A clear need to control visuals via analogue input was identified. An interesting fact is that they used MIDI keyboards to control their software. This choice was made mostly because the variety of sliders, knobs & keys available on these devices.
- Live editing: both VJ's saw the main advantage of a touch based interface to create live graphics and control 3D graphical objects. In that way they would rely less on standard footage and could include more personality in their performance whereas now all live 'drawn' input was mostly done by mouse and keyboard, which often leads to very geometrical shapes.
- Mouse clicks: The main thing the VJ's did was mashing up video's by applying several filters to pieces of video footage. Applying these filters and tweaking them involves a lot of clicking with the mouse. Both VJs indicated that they would like to take a more active role behind their screens instead of 'just' clicking.

Figure 1 : VJ equipment & setup

Conclusions : DJ

When the DJ's were playing records, matching the beats and tempo was only done in an analogue way. The analogue feedback they got from doing this was very important to them. Also the sensitivity of the sliders and buttons on their mixing panel was very crucial whilst doing the 'basic' mixes. However, once a record was playing they were using digital effects like loops, flangers and echo's to get the feeling of actively doing something all the time. Controlling the effects was done with an effect panel that consisted of several jogs and knobs (fig. 2). Both DJ's indicated that it was sometimes hard to know what the precise effect was that would be applied to the music and controlling the effect was not always easy just by using knobs.

Figure 2 : DJ equipment & setup

Setting 2 : The stage

In the previous setting, "the club", both DJ's and VJ's were always starting from existing music or video to create something new. The second setting, the stage, is different because music and video are created on the spot. Also, music and video is created "live" whereas in a club a lot is based on recordings. In this setting observations were done with two musicians, and six 'new media artists'. For the observations, the same method was used as in "The club".

CONCLUSIONS : MUSICIAN

During the interviews, the thing both musicians struggled with was to apply effects on live music. One of them used effect pedals for this, but they were not always really the effect he wanted. The other musician used a touch based Korg KAOSS pad for this, which allows for a lot of flexibility in effect control but is hard to apply to live music as it's hard to preview the effect that will be applied to the live audio stream.

CONCLUSIONS : NEW MEDIA ARTISTS

During the observations it was very clear that the new media artists were very open to new types of interfaces and input modalities. The most interesting thing was that they saw the creation of the input controls as 'part of an artpiece/installation' and not as an "off the shelf" input type. This is why they put a lot of effort in creating their own custom interfaces (fig 3.).

It was intriguing that all artists choose for hardware interfaces as knobs and buttons were very crucial to them too.

GLOBAL RESULTS

The identified use cases within the MuTable project can be organised in three global categories (fig. 3); "fixed interaction", "presentation" and "creation", each of them containing their own specific application possibilities and prerequisites.

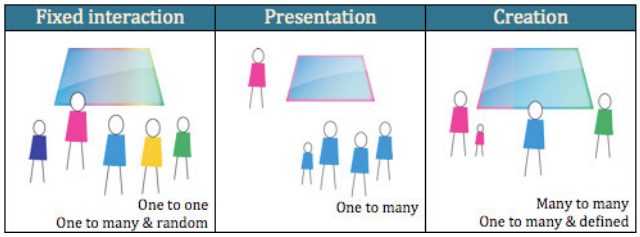

Figure 3: Overview of scenario categories

Fixed interaction

The cases that can be categorised as 'fixed interaction' use a multitouch device as a way to display information in a random way. Usually, people using these applications can interact with a multitouch device simultaneously withouth having to be linked to a certain profile or user id. A very common example is the sorting of photo's text and video where users can navigate and search trough information but are not capable of directly adding their own content. This type of use case implies that everything that happens is in fact random and cannot be controlled by the system or the user in a defined way.

Presentation

The thing that differentiates this category from the others is that there are only two parties interacting in a use case categorised as being a 'presenatation' case. One being a crowd (the audience) and another being the presenter. The crowd only gets to see an end result of what the presenter is doing, this implies that the presenter is controlling items on a multitouch device witouth the crowd knowing it. So in first instance, the multitouch interaction should really be an added value toward the actions the presenter has to take.

Creation

The cases that involve some kind of creation differ from the two other types of use cases because the action a user is doing result are directly related to himself (or his stored profile). For example, a user can upload his personal photos that he wants to use in a certain context, but he might not want anyone else to be able to use his personal photos. Besides the "simple" uploading of personal content, the user could be capable of creating his own content like for e.g. drawings, search spaces and other documents.

CONCLUSION

Observing performers in the event context gave us a lot of information and inspiration into what type of interactions were already being done and can still be done with multimedia content. By choosing for somewhat 'unusual' groups of people to observe it became possible to think beyond casual multitouch applications. A clear question that came out of the observations is to what extend multitouch interfaces should be tactile or should give tactile feedback. To all people interview this was very important, but only for certain functions. This opens up potential to hybrid interfaces where multitouch can certainly play a role in.

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